

Remarks

I. Status of the Application and Claims

At the time that the present Office Action was mailed, the claims pending in the application were claims 61-80. No claims have been cancelled or added herein.

II. The Amendments

No amendments have been made herein.

The Rejections

I. Rejection of Claims Under 35 USC § 103

Allegations

On page 2 of the Office Action, the Examiner maintains a rejection of claims 76-79 under 35 USC §103 as being obvious over Joachimi, *et al.* (US 2003/0130381), in light of Kondo (US 5,830,568) and claims 61-75 and 80 based on Joachimi and Kondo in combination with Wissman (US 2004/0030384). The reasons for the rejections are set out in previous Office Actions. In addition, on page 3 of the Office Action, the Examiner maintains an obviousness-type double patenting rejection of claims 61-80 based upon claims 38-57 in copending application 10/544,041.

On pages 4-6, the Examiner discusses reasons why the arguments filed by Applicants on July 13, 2010 were not found to be persuasive. The discussion below responds to the comments that have been made by the Examiner. Applicants have focused on Joachimi and Kondo since these references are crucial to both rejections under section 103. There is nothing in the Wissman reference that would change the conclusions presented.

Response to Comments Regarding Elements Disclosed in Joachimi

On pages 4-5 of the Office Action, the Examiner alleges, in part:

Applicants argue that the claimed invention has not been rendered obvious by Joachimi ('381) in view of Kondo ('568) and Wissman ('384) for 2 reasons.

1) The first being that the combination of references does not relate to the unique combination concentration of particles and the particle size disclosed by the claims.

2) The second being that a person of ordinary skill in the art would not look to combine the teachings of Joachimi and Kondo in order to maintain transparency since Joachimi is primarily concerned with natural-colored and pigmented laser-absorbing molding compositions."

In response to issue 1), the applicants' have erred in regards to the references. The primary reference to Joachimi discloses component a), the plastic material and component b), the metal oxides in an preferred range of from 0.0004 to 0.05 weight percent, which lies inside of the claimed range and that includes metal oxide containing particles (0106). Therefore, the only thing missing from the primary reference is the size of the particles. With regards to this limitation, the Kondo reference was brought in to show that a preferred particle range of from 10 to 30 nanometers should be used (Column 3, line 18). Therefore, the combination of references renders the claims *prima facie* obvious, because the concentration and particle size are disclosed in the primary and secondary references, respectively.

It is not completely clear from the quote above what support the Examiner has relied on for concluding that Joachimi discloses metal oxides in a preferred range of from 0.0004 to 0.05 weight percent. However, paragraph [0028] in the reference describes IR-absorbing compounds and recites the same range as the Examiner. This paragraph reads as follows:

[0028] B) 0.001 to 0.1, preferably 0.002 to 0.07, more preferably 0.004 to 0.05 wt. % of one or more IR-absorbing compounds selected from the group comprising phthalocyanines, naphthalocyanines, perylenes, quaterlenes, metal complexes, azo dyes, anthraquinones, squaric acid derivatives, immonium dyes and polymethines.

Assuming that this paragraph is the basis for the allegations in the Office Action, it is not clear how the Examiner could conclude that the it includes metal oxides. The paragraph does refer to "metal complexes" but Applicants believe that this phrase generally refers to coordination complexes in which there is a central metal atom bound to multiple anions. This view appears to be consistent with the structures shown in paragraphs [0105] and [0106]. In the absence of evidence to the contrary, Applicants submit that the Examiner's allegation that Joachimi discloses metal oxides is not correct.

It is also unclear how the Examiner concludes that the structure shown in paragraph [0106] is a metal oxide. It appears to Applicants to be a complex without any oxygens bound to the metal and paragraph [0107] suggests that the structure shown represents naphthalocyanines. Clarification is respectfully requested.

Not only is it unclear that Joachimi discloses metal oxides, it is also unclear that it discloses IR absorbing *particles* of any type. It appears to Applicants that the IR absorbing compounds disclosed by Joachimi in paragraph [0028] may be entirely *dyes* which, unlike metal oxide particles, would be expected to dissolve in the thermoplastic material. In this regard, it should be noted that paragraph [0104] discloses that phthalocyanines and naphthalocyanines are particularly suitable, and that phthalocyanines with bulky side groups are preferred because of improved solubility in thermoplastics materials.

The Examiner's argument seems to tacitly assume that the IR-absorbing compounds of Joachimi are dispersed in the thermoplastic material in form of particles and that, taking Joachimi as the primary document, it would be obvious to substitute the particles of Kondo. However, since it appears from paragraph [0104] that the preferred IR absorbers of Joachimi are soluble in thermoplastic material and not dispersed in the form of particles, the combination suggested by the Examiner would either require the selection of nonpreferred compounds in Joachimi (and there is no clear reason for doing so) or the substitution of a particle for a dye (which it appears that the Examiner either has not considered or, for reasons not elaborated, believes has no significance).

Response to Comments Regarding Elements Disclosed in Kondo

Since, as discussed above, Joachimi does not disclose compositions with laser absorbing metal oxides in a preferred range of from 0.0004 to 0.05 as alleged by the Examiner (or, as far as Applicants can tell, in any range at all), Applicants do not agree with the allegation that the only remaining claim element needed is the size of the particles and that this is supplied by Kondo.

Moreover, Applicants submit that Kondo does not have any teachings that would motivate one of skill in the art to select compositions having particles with the size and concentration characteristics required by the present claims from the broad range of possibilities available. In this regard, Applicants pointed out in their previous response that Kondo teaches a concentration range of particles of 0.01-10% (see col. 3, lines 19-56) and that, in this very large range, there is only a single concentration (0.01%) that is also in the range recited in the present claims. Applicants can see no reason why one of skill in the art would select this one concentration to combine with the teachings of Joachimi. The only

reason for the selection appears to be a desire of the Examiner to reconstruct Applicants' claimed invention and this is not a proper way to establish prima facie obviousness.

In their previous response, Applicants argued, essentially, that to the extent that Kondo disclosed compositions with the combination of particle size and concentration of Applicants' claims, it did so only as part of a very broad genus and that there were no teachings that would lead one of skill in the art to select this claimed combination from the large number of possibilities available. Applicants suggested that, given these circumstances, obviousness should be analyzed under the criteria set forth in *In re Baird*.

In the present Office Action, the Examiner seems to suggest that, since a claimed subset of a prior art range is being considered, analysis should not take place under Baird but rather as discussed in MPEP 2144.05. However, Applicants submit that 2144.05 actually suggests that Baird is appropriate. In this regard, the Examiner's attention is directed to the second paragraph in 2144.05 under the section entitled "Overlap of Ranges" which reads in part:

However, if the reference's disclosed range is so broad as to encompass a very large number of possible distinct compositions, this might present a situation analogous to the obviousness of a species when the prior art broadly discloses a genus. *Id.* See also *In re Baird*, 16 F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1994); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); MPEP § 2144.08.

Thus, Baird provides an appropriate analytical framework for the obviousness of the present claims which, Applicants submit, leads to the conclusion that the claims are nonobvious.

Response to Comments Regarding Motivation to Combine References

In response to Applicants' arguments that there is not a clear motivation for combining the teachings of Joachimi and Kondo, the Examiner states:

In response to issue 2), the Joachimi reference discloses that the compositions contain at least one IR absorbing component, the Kondo reference discloses suitable IR absorbing components that fall within the scope of the claims and it would have been obvious to substitute one IR-absorbing component for another arrive at the presently claimed invention. Furthermore, while the molded parts of Joachimi are to be pigmented and/or colored and therefore will not be 100% transmissive, the transparency motivation gleaned from Kondo is still relevant since one of ordinary skill in the art would understand the importance of using

an additive that does not change the calculated light absorptivity of the final composition. A user may intend on a certain transparency/color based on the desired pigment composition and if an IR absorptive particle (which both references contain) is used that changes these light properties, then the user would be motivated to reformulate the pigment package to compensate for the light characteristics of said IR absorptive particle.

The fact that the Kondo reference is not concerned with laser welding at all is irrelevant because Kondo discloses known IR-absorptive components and a person of ordinary skill in the art would use the IR-absorptive components disclosed by Kondo because Joachimi requires such components to be present in his composition and it is prima facie obvious to add a known ingredient to a known composition for its known function. *In re Lindner* 173 USPQ 356; *In re Dial et al* 140 USPQ 244.

In the above quote, the Examiner asserts that it would have been obvious to substitute one IR-absorbing component for another to arrive at the presently claimed invention. However, this ignores the fact that the IR absorbing material of Joachimi and Kondo are structurally different and are being used for very different purposes. Kondo is using IR absorbers as part of laminated glass that is suitable for automotive or architectural purposes (see abstract), whereas Joachimi is using IR absorbers in laser welding compositions. Applicants do not believe that it is self evident, as the Examiner seems to suggest, that an IR absorber that has been chosen because of its ability to control the transmission of sunlight in a windshield or building (and for similar characteristics) would be a good choice (or could even be successfully used) to transduce laser energy in a plastic welding composition. For example, in the context of the Kondo reference, particles may be selected to fulfil the objective of hindering the passage of solar infrared radiation. However this would not necessarily mean that infrared radiation is absorbed by the particles; it might be reflected as well.¹ Reflectors of IR radiation, as opposed to absorbers, might have an advantage, for example, in reducing the heating of windshields or the glass of buildings but would not appear to be a good choice for the laser welding objectives of Joachimi. Thus, one of skill in the art attempting to improve the method of Joachimi could not reasonably predict such an improvement would occur using the teachings of Kondo.

¹ This understanding is supported by column 1, lines 50 – 52, where ultra-fine particles of a prior art document are said to have an infrared reflection function.

II. Double Patenting Rejections

On pages 3-4 of the Office Action, the Examiner repeats an obviousness-type double patenting rejection of claims 61-80 based upon claims 38-57 in US 10/544,041. Because both applications are still in prosecution and their claims may change before allowance, Applicants respectfully request that the double patenting rejection be deferred. However, Applicants would like to point out that, in a recent response to an Office Action in the '041 case, Applicants requested substantial amendments to the claims therein. Applicants therefore request that the Examiner reexamine the status of the '041 application and reconsider the present double patenting rejection before the next action.

Conclusion

In light of the considerations above, Applicants respectfully request that the Examiner reconsider and withdraw the rejections that have been made. If, in the opinion of the Examiner, a phone call may help to expedite the prosecution of this application, the Examiner is invited to call Applicants' undersigned attorney at (240)683-6165.

Respectfully submitted,

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